

Answers

1) C

State of the Climate in Asia Report, 2020

This report was launched by the World Meteorological Organisation (WMO).

Carbon dioxide

- The report highlighted that the increase in CO₂ from 2019 to 2020 was slightly lower than that observed from 2018 to 2019 but higher than the average annual growth rate over the last decade.
- This is despite the approximately 5.6% drop in fossil fuel CO₂ emissions in 2020 due to restrictions related to the pandemic.

Methane

- For methane, the increase from 2019 to 2020 was higher than that observed from 2018 to 2019 and also higher than the average annual growth rate over the last decade.

Nitrous Oxides

- For nitrous oxides also, the increase was higher and also than the average annual growth rate over the past 10 years.
- The National Oceanic and Atmospheric Administration (NOAA) Annual Greenhouse Gas Index (AGGI) shows that from 1990 to 2020, forcing by long-lived greenhouse gases (LLGHGs) increased by 47%, with CO₂ accounting for about 80% of this increase.
- Concentration of CO₂, the most significant greenhouse gas, reached 413.2 parts per million in 2020 and is 149% of the pre-industrial level.
- Methane (CH₄) is 262% and nitrous oxide (N₂O) is 123% of the levels in 1750 when human activities started disrupting earth's natural equilibrium.

2) B

- The Qutb Shahi tombs complex has been on the tentative list of World Heritage Sites since 2010. The Qutb Shahi Monuments of Hyderabad Golconda Fort, Qutb Shahi Tombs, Charminar

- Located in the city of Hyderabad, capital of the state of Andhra Pradesh, Golconda Fort, Qutb Shahi Tombs and Charminar are the landmarks that symbolize the Qutb Shahi Dynasty.
- The monuments of the Qutb Shahi period represent different building typologies; Golconda is a fortified citadel and an early capital city of the Qutb Shahi dynasty.
- It is an ensemble of military structures, ramparts, gates, bastions, armoury; religious structures such as mosques, temples; residential structures such as palaces; water systems such as canals, fountains and landscaped gardens.
- The tombs of Qutb Shahis are a mausoleum complex, a royal necropolis which comprises the tombs of the Royal family and the officials who faithfully served them and also mortuary bath and mosques.
- Charminar on the other hand, is a ceremonial Gateway built to celebrate the foundation of Hyderabad, a new Millennial City, in 1591 A.D.

3) B

Small Islands Developing States (SIDS)

- There are 52 countries classified as SIDS out of which 38 are United Nations members while 14 are non-UN members or Associate Members of the Regional Commissions.
- SIDS is a distinct group of developing countries that face specific economic, social and environmental vulnerabilities or challenges.
- SIDS countries were recognized as a special case for the first time at the Rio Summit 1992.
- SIDS is located over these geographical regions. They are all island territories in anyone of the following three regions, namely Caribbean, Pacific, Atlantic, Indian Ocean, Mediterranean and South China Sea (AIMS).
- Sri Lanka is not a member of SIDS.
- Along with Australia, the UK and Small Island developing states (SIDS) will be launching a new grouping of infrastructure for Resilient Island States (IRIS) on the sidelines of the upcoming Conference of Parties (COP26).
- This platform is aimed at creating a coalition for putting in place infrastructure that can withstand natural disasters and lessen economic losses in island nations.
- Australia, India and the UK have committed an initial funding of \$10 million for IRIS.
- For SIDS, losses from disaster, including infrastructure, is the highest as a percentage of gross domestic product (GDP).

- Mediterranean and South China Sea regions, are among the most vulnerable to geophysical and hydro-meteorological hazards.
- The impact of climate change in the form of tsunamis, cyclones, earthquakes and heavy rains are more frequent and intense in many of these countries.
- Susceptibility to very high relative economic losses due to disasters averages 1-10 per cent of GDP annually.
- SIDS accounts for two-thirds of the countries that suffer the highest relative losses due to disasters.

4) C

Green-Term Ahead Market (G-TAM)

- It is a new market segment for trading in renewable energy following the Central Electricity Regulatory Commission (CERC) approval on a day-ahead basis.
- The GDAM will enable electricity generation and distribution companies to buy or sell renewable energy through open access.
- The Green Day-ahead market will operate in an integrated way with the conventional day-ahead market.
- The Exchanges will offer the market participants to submit bids together for both conventional and renewable energy through the separate bidding windows.
- National Load Despatch Centre (NLDC), POSOCO, as the Nodal Agency, has set up the latest technologies and communication infrastructure for facilitating the Green Day Ahead Market.

Day-Ahead-Market (DAM)

- It is a physical electricity trading market for deliveries for any/some/all 15 minute time blocks in 24 hours of next day starting from midnight.
- The prices and quantum of electricity to be traded are determined through a double sided closed auction bidding process

5) A

White Dwarf

- A white dwarf is very small, hot star, the last stage in the life cycle of a star like the Sun.
- White dwarfs are the remains of normal stars, whose nuclear energy supplies have been used up.

- White dwarf consists of degenerate matter with a very high density due to gravitational effects.
- A typical; white dwarf is half the size of our Sun and has a surface gravity 100,000 times that of Earth.
- Using the Hubble Space telescope and Transiting Exoplanet Survey Satellite (TESS), astronomers have identified several white dwarfs over the years.
- An international team has reported a unique phenomenon in a white dwarf about 1,400 light years from Earth.
- They saw the white dwarf lose its brightness in 30 minutes. These gaps in brightness have been previously reported but the process usually takes place over a period of several days to months.

Red Dwarf

- The faintest (less than 1/1000th the brightness of the Sun) main sequence stars are called the red dwarfs.
- Because of their low luminosity, they are not visible to the naked eye.
- They are quite small compared to the sun and have a surface temperature of about 4000 degree Celsius.
- According to some estimates, red dwarfs make up three-quarters of the stars in the Milky Way.
- Proxima Centauri, the nearest star to the Sun, is a red dwarf.

6) C

ABHYAS - the High-speed Expendable Aerial Target (HEAT) was successfully flight-tested recently by the Defence Research and Development Organisation (DRDO) from the Integrated Test Range (ITR), Chandipur off the coast of Bay of Bengal in Odisha.

ABHYAS

- It is designed & developed by DRDO's Aeronautical Development Establishment (ADE), Bengaluru.
- The air vehicle is launched using twin under-slung boosters which provide the initial acceleration to the vehicle.
- It is powered by a gas turbine engine to sustain a long endurance flight at subsonic speed.

- The target aircraft is equipped with MEMS based Inertial Navigation System (INS) for navigation along with the Flight Control Computer (FCC) for guidance and control.
- The vehicle is programmed for fully autonomous flight.
- The check-out of air vehicle is done using laptop-based Ground Control Station (GCS).

7) C

National Fund to Control Drug Abuse

- Ministry of Social Justice and Empowerment has recommended that the National Fund to Control Drug Abuse (NFCDA) be used to carry out de-addiction program, rather than just policing activities.
- The World Health Organisation defines 'Drug Abuse' as the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs.
- The fund was created in accordance with a provision of the Narcotic Drugs and Psychotropic Substances Act (NDPS Act), 1985.

Objectives - The funds can be utilized to meet the expenditure incurred in connection with the measures taken for,

- Combating illicit traffic in narcotic drugs, psychotropic substances or controlled substances;
- Controlling the abuse of narcotic drugs & psychotropic substances;
- Identifying, treating, rehabilitating addicts;
- Educating public against drug abuse; and
- Supplying drugs to addicts where such supply is a medical necessity.

8) B

9) D

10) D

11) B

Ayushman Bharat Health Infrastructure Mission

India's largest scheme to scale-up health infrastructure

- The Ayushman Bharat Health Infrastructure Mission is aimed at ensuring a robust public health infrastructure in both urban and rural areas, capable of responding to public health emergencies or disease outbreak.

- In a bid to increase accessibility, the Ayushman Bharat Health Infrastructure Mission, an addition to the National Health Mission, will provide support to 17,788 rural Health and Wellness Centres in 10 'high focus' states and establish 11,024 urban Health and Wellness Centres across the country.
- It will ensure access to critical care services in all districts of the country with over five lakh population through 'Exclusive Critical Care Hospital Blocks'.
- The remaining districts will be covered through referral services.
- Integrated public health labs will also be set up in all districts, giving people access to "a full range of diagnostic services" through a network of laboratories across the country.
- The Ayushman Bharat Health Infrastructure Mission also aims to establish an IT-enabled disease surveillance system through a network of surveillance laboratories at block, district, regional and national levels.
- All the public health labs will be connected through the Integrated Health Information Portal, which will be expanded to all states and UTs.
- The mission will set up other infrastructure, including a national institution for one health, four national institutes for virology, a regional research platform for WHO's South East Asia region, nine bio safety level-III laboratories, and five regional centers for disease control.

12) A

Cryptocurrency Adoption Rate

- Internet users in Nigeria have the highest rates of cryptocurrency ownership in the world, followed by Malaysia and Australia, according to data by comparison firm Finder.
- The firm surveyed over 41,000 individuals across 22 countries to measure the growth and adoption of cryptocurrencies.
- Japan ranked lowest in the list with only 4.6% of the population owning the virtual asset.
- India secured the seventh place with nearly 15.4% respondents saying they own at least one cryptocurrency.
- Among all crypto assets, Bitcoin emerged as most popular, with the highest adoption.
- Most recently, China declared all cryptocurrency transactions illegal, while U.S. lawmakers have urged tighter regulation.

13) A

14) C

Carbon Budget

- Carbon budgets tell us how much CO₂ we can still emit while keeping warming below specific limits.
- Intergovernmental Panel on Climate Change released the Sixth Assessment Report (AR6) which estimates the carbon budget.
- Carbon budgets are constructed on the premise that there is a near-linear relationship between rising global temperatures and the level of cumulative atmospheric CO₂.
- Carbon budgets are complex estimates and are typically subject to several uncertainties such as the effect of non-CO₂ greenhouse gases (GHG) [methane and nitrous oxide]
- The AR6 estimate of the remaining carbon budget from 2020 was developed on the basis of five components.
- Historical warming till date.
- Warming produced per tonne of CO₂, also known as transient climate response to cumulative emissions of CO₂ (TCRE).
- Warming that will occur once CO₂ emissions reach net-zero levels, known as the zero emissions commitment (ZEC).
- Warming from non-CO₂ gases such as methane and nitrous oxide.
- Earth system feedbacks such as thawing of permafrost.

15) B

World Bank

- With 189 member countries, the World Bank Group is a unique global partnership.
- Five institutions working for sustainable solutions that reduce poverty and build shared prosperity in developing countries.
- The Changing Wealth of Nations 2021 report was published by the World Bank.
- The latest edition of this periodic report has measured wealth creation and distribution in 146 countries covering a 20-year period from 1995-2018.
- The World Bank included gross domestic product, human-produced capital, human capital and natural capital like renewable and non-renewable natural resources in its measurement of wealth.
- The Bank defines human capital as “earnings over a person’s lifetime.”
- The report found that air pollution was seemingly taking a toll on this significant wealth generator.
- South Asia as a region was the most severely affected by the estimated loss of human capital due to air pollution.